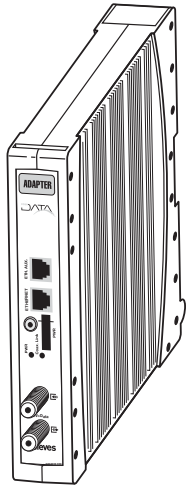
Televes

ETHERNET COAXIAL ADAPTOR

MxU T05 128 Mbps



Ref. 7672

User Manual

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Important safety instructions

- Power sockets should be close to the equipment and easily accessible.
- Do not connect feed until the installation is complete.
- To disconnect the equipment from the feed grid, unplug the adaptor.
- Do not use oils, solvents, petrol, paint thinners or insecticides to clean this device.
- This device contains no user-repairable parts. Do not open as there is a risk of electric shock.
- Do not use the device near water, for example: bathtubs, washbasins, humid areas, swimming pools, etc.
- Use the power feed recommended on the data plate.
- Unplug the grid adaptor under the following circumstances:
  a) If the plug is damaged.
  b) If the device has been in contact with water.
  c) If the device is not functioning normally.
  d) If the device has broken down.

CE This symbol indicates total compliance with EC marking

This symbol indicates the equipment should be used indoors.

This symbol indicates that the equipment complies with Class II equipment safety requirements.

ENGLISH

CONTENTS **Page**

1.- INTRODUCTION 4
1.1 - Ethernet Coaxial Head Adaptor 128Mbps 4
1.2 - Technical specifications 4
1.3 - System requirements 4

2.- ADAPTOR PORTS 6
2.1 - The Adaptor LEDs 7

3.- MOUNTING OF THE ETHERNET-COAXIAL HEAD ADAPTOR 128MBPS 8
3.1 - Internet Connection through an External Router 8
3.2 - Coaxial Network Connection within the Head 9
3.3 - Coaxial Network Connection with a diplexer filter 10
3.4 - Connecting the Ethernet Coaxial User Adaptors to the power points 11

4.- SAMPLE INSTALLATIONS 12
Shared Internet Access 12
Videostreaming Service Implementation 13
Installation of Multiple Adaptors in Head 14

5.- TECHNICAL SPECIFICATIONS 16

6.- PROBLEM SOLVING 17

1.- Introduction

1.1- Ethernet Coaxial-Head-Adaptor 128Mbps

The function of the "**Ethernet - Coaxial Adaptor128Mbps**" is the immediate and simple connection of multiple PCs to **the coaxial network** of your building or your ICT network. There is no need for extra cables, Hubs or Switches. The data will be carried on your building or ICT network's TV distribution coaxial cable installation.

The **Ethernet - Coaxial Adaptor 128Mbps** enables network data transmission simultaneously with that of the existing TV channels or services. This device is equipped with two standard F connectors, an Ethernet port and a feed connector, and is able to transmit up to 72Mbps.

The Adaptor connects the data network access point established in the head (ADSL, LDMS, Cable-modem, etc.) to each TV socket in your building through the coaxial cable.

1.2- Technical specifications

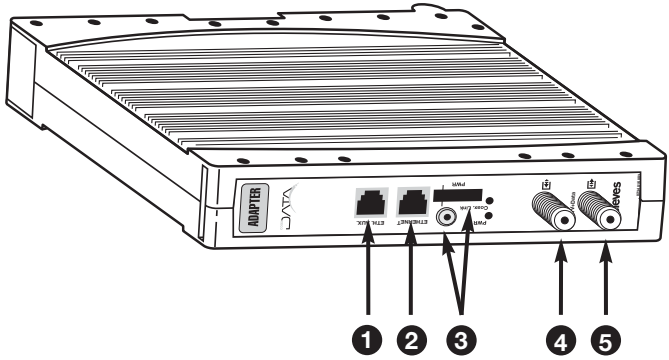
- Connects a computer to an Internet access point, using your building's existing coaxial cable.
- Easy to install, with no need to open up the PC or install any kind of driver.
- Data transfer rate up to **72 Mbps**
- 2 easy-to-read LED indicators showing the device's status.
- Connects a total of up to 31 PCs on your coaxial distribution network
- No Hubs or Switches are required. The data is carried on the coaxial cable.
- Shares high-velocity Internet access.
- Sound muffling between head and sockets should in no case exceed **50 dB** on the return channel.
- It supports Quality of Service for the implementation of a Video Streaming Service or VoIP on the coaxial network.

1.3- System requirements

- `To be able to use this device you must have Internet access equipment (ADSL, Cable Modem, LMDS, etc...) with an Ethernet 802.3 network interface
- The system is totally **Plug&Play** and requires no additional software or driver installation; you merely have to connect the adaptor to the network interface corresponding to your internet access equipment.

- To connect the Internet access equipment with the Ethernet-Coaxial Adaptor 128Mbps you will need an Ethernet CAT-5 cable.

2.- Adaptor Ports



1 **Ethernet Aux**

Through this port you can access the devices connected to the **Ethernet** port but will be unable to communicate with the 7672 adaptor. This is the Ethernet port to be used for connecting other 7672 adaptors onto the head, creating additional data networks and preventing cross-communication between the different data networks.

2 **Ethernet**

The Ethernet port is an RJ-45 port for connecting your Coaxial Adaptor to the Ethernet port on the router or Internet access modem. The connection between the Router and the Adaptor is done with an Ethernet CAT-5 cable.

3 **Feed connector**

This connector enables device power feed through feed source Ref. 5029. There is also a jack connector in the event that Ref. 5029 is unavailable.

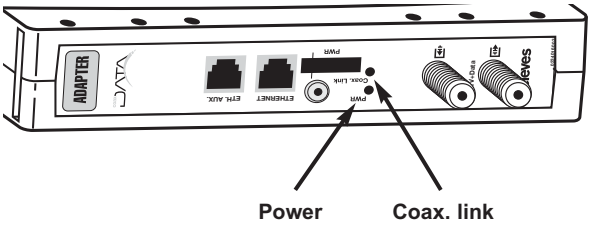
4 **RF IN**

The F connector for TV signal input from the other components on the head.

5 **RF Out**

The F connector for data network+TV output. This is the connector for the coaxial network that distributes the signals from the head to the different sockets in the building.

2.1- The Adaptor LEDs



The Ethernet Coaxial Adaptor 128 Mbps includes the following indicator LEDs:

1 Power

A yellow LED that illuminates when the device is connected to the feed source.

2 Coax. link

A green LED that will light up when the head adaptor is linked to a user adaptor. Once the link has been established, in the event there is activity on the network this LED will blink, showing that data are being transmitted/received.

3.- Mounting of the Ethernet-Coaxial Head Adaptor 128Mbps

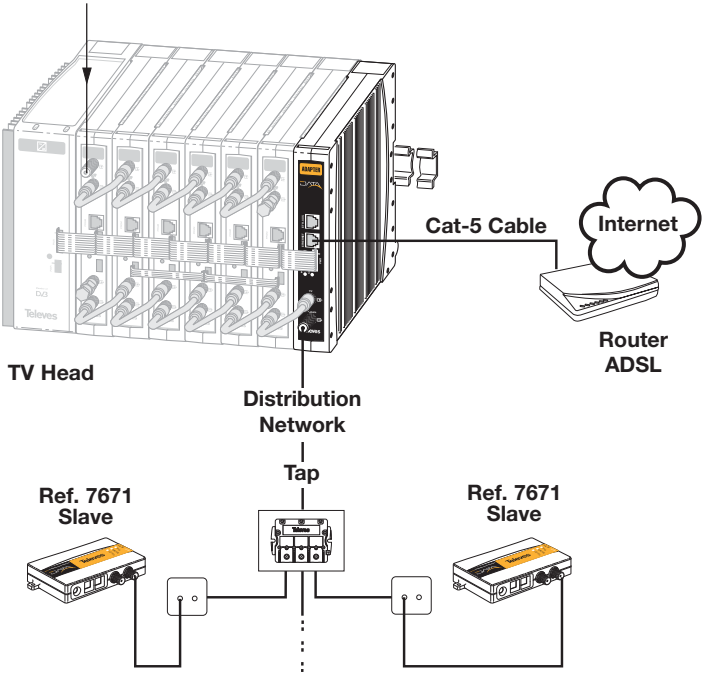
The following are instructions for connecting the **Coaxial MxU Adaptor 128Mbps** with the rest of the head components.

Once it has been installed, you can connect the **Ethernet-Coaxial Adaptor Ref. 7671** to any socket in your distribution scheme, enabling you to access Internet.

3.1- Connecting to Internet through an External Router

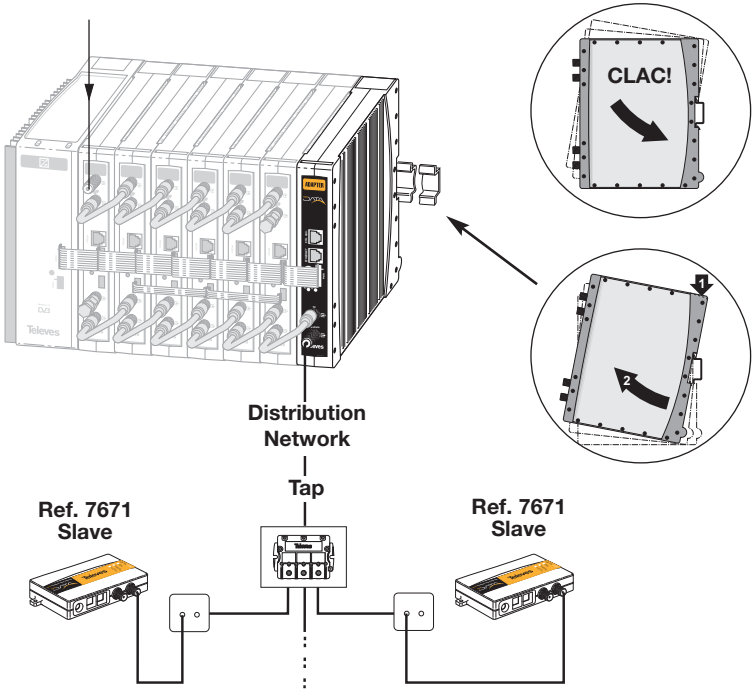
For 7672 to enable Internet access, it should be connected to some device providing connectivity; the most usual method of access is by using an ADSL Router, a Cable Modem or a similar device. To do this, you must use a CAT-5 Ethernet cable.

1. Connect one end of the CAT-5 cable to the Ethernet Network interface at the Internet access point.
2. Connect the other end to the RJ-45 connector of the 7672.



3.2- Connecting to the Coaxial Network inside the Head

You can integrate the Ethernet-Coaxial Adaptor with the rest of the head components. To do this, proceed as follows:



1. Using an EMC Ref.5074 bridging connector, connect the F 'RF IN' connector to the front module of the head. In the event it is a first module, you will have to connect a Ref. 4061 line terminator.

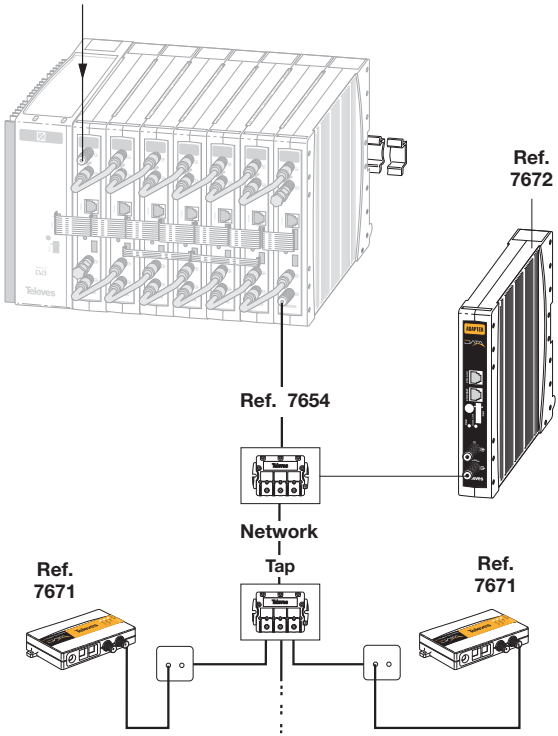
2. Connect the F 'RF OUT' connector to the next module on the head or, if it is the last module on the head, connect it with the coaxial network input point.

Note: We recommend that the Ethernet-Coaxial Head Adaptor 128Mbps be the last serial component on the head before signal input on the coaxial network.

3.3- Connecting with the coaxial network using a diplexer filter

If there is no fixture for connecting the Adaptor to the head, or if you wish the data signal to be injected into the network outside of the head, do the following:

1. Connect the signal that has been previously treated in the head to the 47-862 Mhz input socket of the Ref. 7654 diplexer filter.
2. Connect the data signal from the Ethernet – Coaxial Adaptor 128Mbps to the 5-40 Mhz input socket of the Ref. 7654 diplexer filter.
3. Connect the output of the diplexer filter to the coaxial network



Note: If no 7654 diplexer filter is available, simply mix the TV head with the data signal using a mixer (for example Ref. 5150) although this may reduce the performance of the system if there is presence of low frequency background noise generated by the head processors.

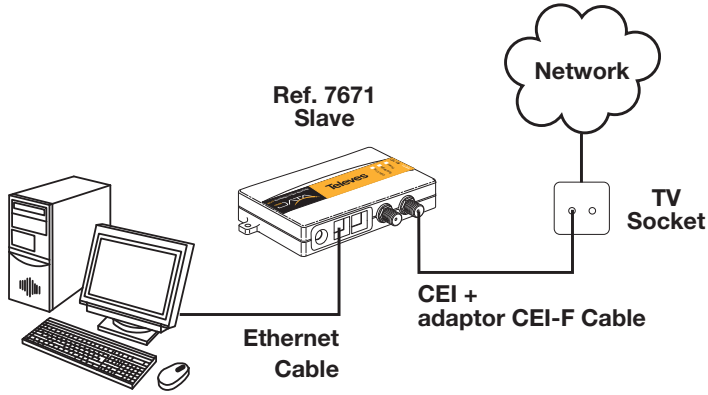
3.4- Connecting the Ethernet Coaxial User Adaptors to the sockets

The last step necessary is to connect the **Ref. 7671 Coaxial Adaptor** to the sockets of your installation. For the purpose, do the following:

To connect the slave adaptor to one of the TV sockets:

1. Connect the end of the coaxial cable to the TV outlet (Male CEI connector).
2. Connect the other end of the cable to the modem data input port (F Connector).
3. Check that the red Synch Mode light is on. If this light turns on when the adaptor is connected to the socket, this means it has connectivity with 7672 and therefore communication with the head has been correctly established.
4. Check that the socket you are using to connect the Adaptor will support the return channel (5-30Mhz). If you are in any doubt or are unsure of the characteristics of your TV socket, we recommend you use one of the following TV sockets: Ref.5232, Ref.5233, Ref.5226 or Ref.5228.

As noted in the general technical specifications of the **Coaxial Adaptor 128Mbps,** the maximum sound attenuation between two connection points should be less than 50 dB on the 12-28Mhz return channel.



Now your coaxial network sockets have been transformed into data sockets!

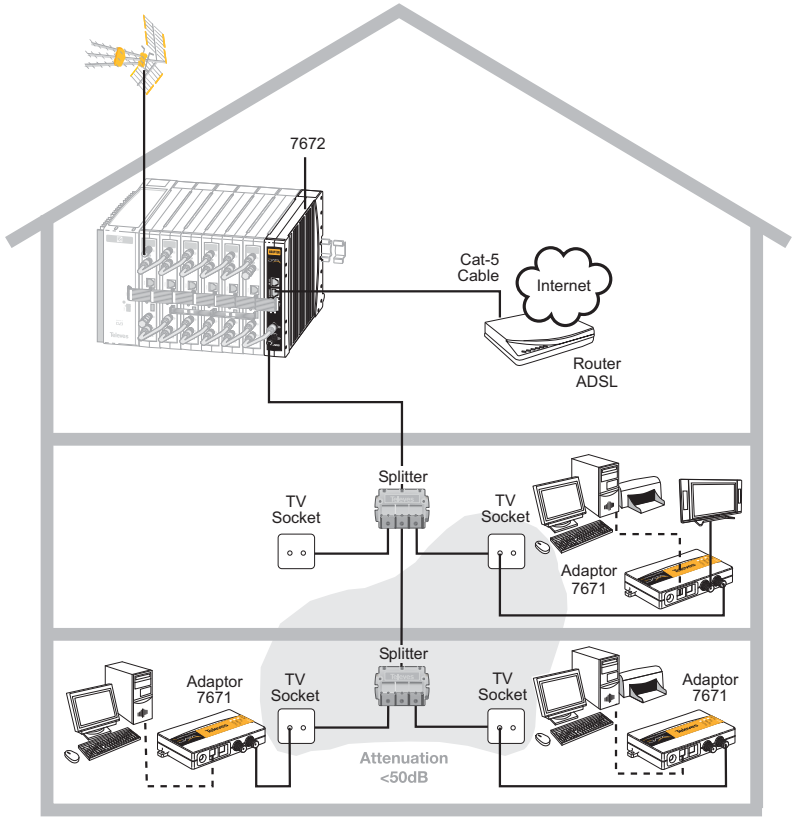
4.- Installation Examples

Shared Internet Access

In the event that you wish to share Internet access, you will only have to connect the 7672 to an ADSL router in such a way that the connection is shared among all the nodes of the coaxial network.

It is necessary for the Internet router to provide all the services required by modem-connected users, including DNS, DHCP, NAT, etc... In order to carry out a correct installation, check the router manual of your Internet provider.

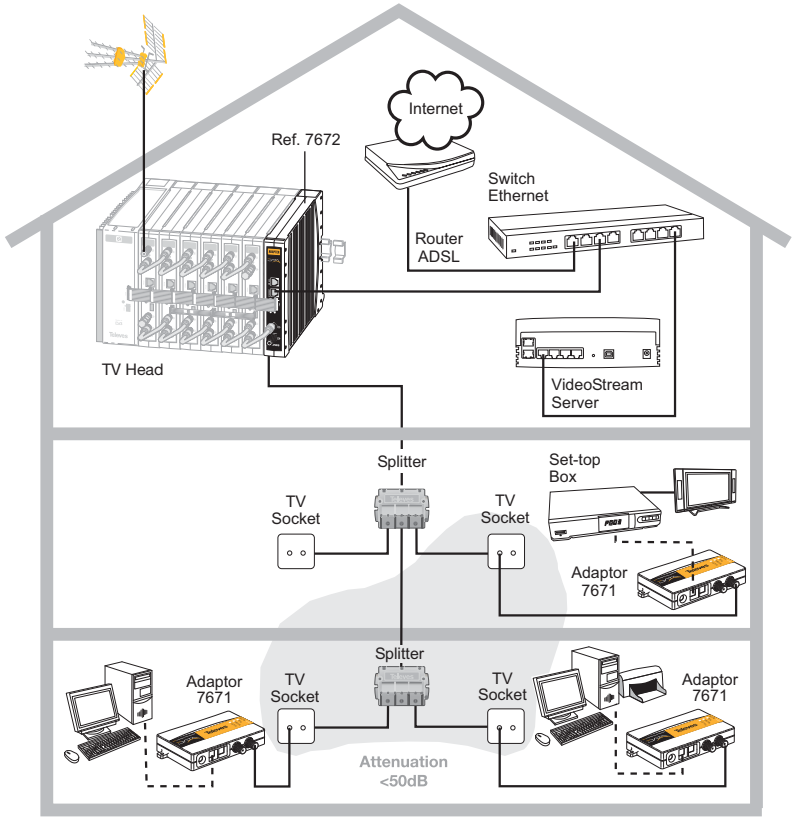
Since the RJ45 connector of the head adaptor is designed specifically for connecting to commuting components it will NOT be necessary to use a crossover cable for connecting the bus converter and the broadband router.



Videostreaming service implementation

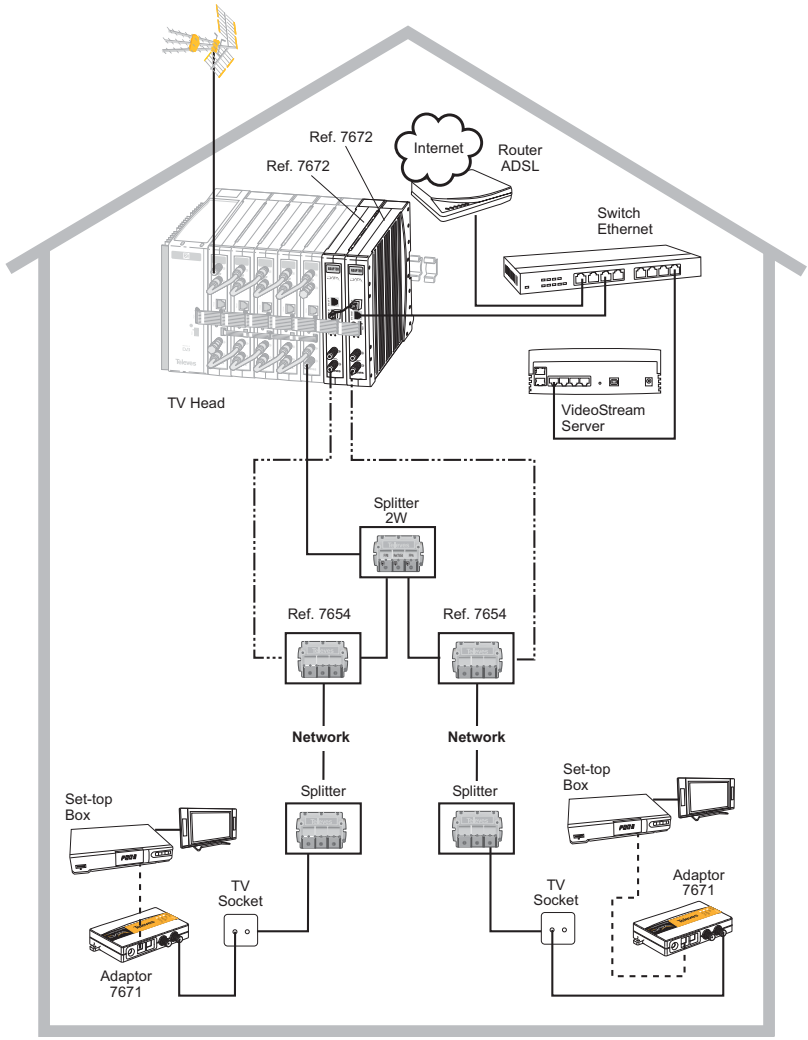
The 7672 can be used to implement Videostreaming and/or TVIP (TV streaming on IP) services in your building or ICT network.

To do this, you need to install a VideoStream Server in the head and Set-top Boxes in each of the apartments where Video is to be served.



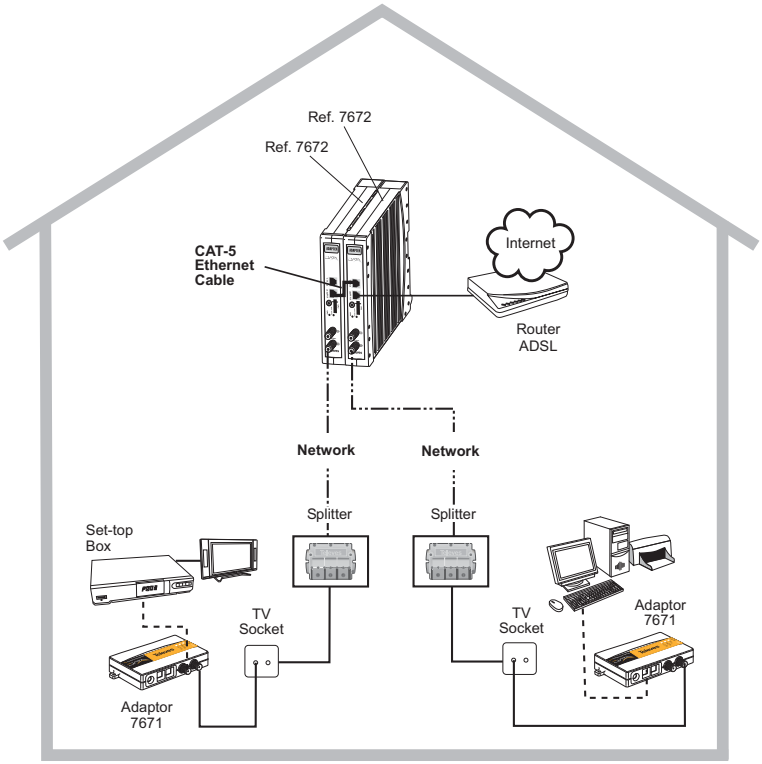
Installation of Multiple Adaptors on the Head

In the event your installation has more than one coaxial downloading cable distributing the signals through head distributors, you can enhance the technical specifications of your data network by installing several adaptors on your **Ref.7672** head.



To do this, you have to link together several 7672s, connecting the Ethernet port of one of the downloading cables with the Ethernet Aux port of the other 7672 adaptor.

The Ethernet Aux port is not communicated with the 7672 adaptor it is connected to, but it is communicated with the Ethernet port in such a way that traffic generated by each of the downloads is added to the Ethernet connector, preventing cross-communication among the downloads.



With this type of installation you can increase the number of users in the system as well as the available bandwidth, while increasing Videostreaming and Internet access capacity.

5- Technical specifications

Output signal level	120 dBmV
Maximum attenuation	50 dB
Minimum attenuation	12 dB
Input frequency range	57 a 2150 MHz
Output frequency range	12 to 28 MHz (data) + 57 a 2150 MHz (TV)
Maximum consumption (12V)	400 mA
Input return losses	> 10dB
Output return losses	> 10dB
Maximum Spectral Density of Power	–60 dBm/Hz
Minimum Spectral Density of Reception (Gaussian noise with RX of -140dBm/Hz)	-110 dBm/Hz
Maximum working temperature	45ºC
Transmission rate	128 Mpbs
Maximum supported distance	<= 800 m.
Quality of Service	VLAN 802.1p Priority Support + UDP flows priority
Maximum number of user adaptors	31
Connectors	2 port Ethernet RJ-45 F Port for TV input F Port for TV+Data output Feed connector.

6.- PROBLEM SOLVING

If you find connectivity problems in your data network, check the following points:

1. **Check that the slave adaptors have permanently lit up the Sync Mode LED.**
   In the event that the adaptors have not lit up the red Sync Mode LED indicating connectivity with the master.

2. **Check that the return channel is available on your coaxial network**
   The return channel operating on 12-28Mhz frequencies should be operating in your coaxial network both downstream (head-socket) and upstream (socket-head).

   Normally, problems of accessibility to the return channel are associated with the TV socket connected to adaptor 7671. In the event of any doubt on this point, use one of the following sockets instead: Ref.5232, Ref.5233, Ref.5226 or Ref.5228.

3. **Check that the inter-adaptor attenuation does not exceed 50 dB on the 12-28 MHz working channel.**

4. **TV signal filtering at the head**
   To avoid TV head interference in the data signal it is a good idea to use diplexer filters.
   We recommend the use of diplexer filter Ref. 7654 to mix the data and TV signals and prevent the head from interfering with the data signal.

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Descripción / Descrição / *Description / Description*:	**Gateway MxU V1.00**
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Con los requerimientos de la Directiva de baja tensión 73 / 23 / CEE y Directiva EMC 89 / 336 / CEE, modificadas por la Directiva 93 / 68 / CEE, para cuya evaluación se han utilizado las siguientes normas:

Com as especificações da Directiva da baixa tensão 73 / 23 / CEE e Directiva EMC 89 / 336 / CEE, modificadas pela Directiva 93 / 68 / CEE, para cuja aprovação se aplicou as seguintes normas:

Avec les spécifications des Directives 73 / 23 / CEE et 89 / 336 / CEE, modifiées par la directive 93 / 68 / CEE, pour l'évaluation on a appliqué les normes:

With the Low Voltage Directive 73 / 23 / EEC and the EMC Directive 89 / 336 / EEC as last amended by Directive 93 / 68 / EEC requirements, for the evaluation regarding the Directive, the following standards were applied:

EN 60950-1: 2001
EN 55022: 1998
EN 55024: 1998

Santiago de Compostela, 31/07/2007

CE

José L. Fernandez Carnero
Technical director

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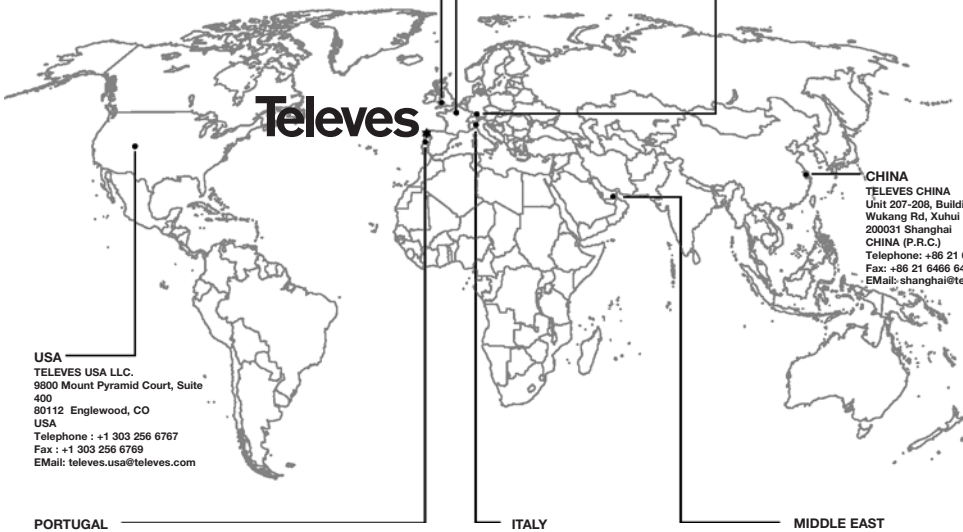

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